



GRIPEN
SAAB • BRITISH AEROSPACE

GRIPEN NEWS

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GO-AHEAD FOR SOUTH AFRICAN GRIPENS

South Africa's government has approved the purchase of 28 Gripen fighters for the South African Air Force, marking the first export order for Gripen and the most significant trilateral trade deal between South Africa, Sweden, and the UK.

The cabinet decision, announced on September 15, also won unequivocal political support from each of the opposition parties represented in South Africa's democratic Parliament.

Trade & Industry Minister, Alec Irwin, told journalists that the Cabinet supported the full combined deal for 28 Gripen and 24 British Aerospace Hawk trainers as part of the country's total strategic defence procurement package valued at ZAR 29,9-billion (about 5,5-bnUS\$). The package also includes submarines, corvettes and helicopters.

The aircraft element includes a get-out clause that provides South Africa with the option to cancel some of its aircraft commitments in the event of a dire economic collapse.

"Government will move over an 11 year period to secure the full package as envisaged. It is our intention to go for the full ZAR 29,9-billion commitment, but we have included the safety catch ('get-out' clause) involving convertible options which will only be exercised in the event of an economic catastrophe," he explained.

Defence Minister Patrick Lekota earlier confirmed that the first tranche of aircraft would comprise nine dual-seat Gripens and 12 Hawk 100s. The balance of 19 single-seat Gripens and 12 further Hawks will be split into two separate delivery tranches. Gripen deliveries will be completed by 2011, overlapping with the withdrawal of the last batch of Cheetah C aircraft.

South Africa's government is attempting to kick-start the country's

economy with this procurement package. In what commentators have described as "the most far-reaching offset programme ever", South Africa has linked the various package elements to contractual commitments for significant investment in industry, trade and development. South Africa expects the packages to yield a 3:1 economic return through the industrial co-operation projects; ie. each Rand spent on the packages will result in the generation of three Rands through the offsets.

Although the contracts will be finalised in November, some initial industrial work on the Gripen has already been placed with South African contractors. Denel, the state-owned aerospace and defence conglomerate, is working with British Aerospace and Saab engineers on the design of a NATO-interoperable stores and weapons pylon for the aircraft. For this purpose Saab has installed a state-of-the-art CATIA computer design facility at Denel's factory in Johannesburg. Grintek Avionics has also begun work on the design of an audio management suite and communications control display unit for the Gripen. Additional contracts will be announced as the project progresses towards the first Gripen delivery in 2006.

Non-defence industries will also benefit from the offset elements of the deal. In addition to Saab and British Aerospace, Volvo and companies such as ABB, Electrolux, Ericsson and Atlas Copco are involved in establishing new business ventures in South Africa with local partners. ■



Robert Gardner, BAE



Tyrone Arthur, Business Day

South Africa's Defence Minister Patrick Lekota (foreground) outlines the country's strategic defence procurement programme including a commitment for 28 Gripen fighters. He was joined by (from right to left) Finance Minister Trevor Manuel, Chief Government Negotiator, Jayendra Naidoo, SANDF Chief, Gen. Siphwe Nyanda and Armscor's Procurement Director Chippy Shaikh.

PROPULSIVE COOPERATION

Volvo Aero has been involved in the Gripen program from the start. In the years immediately ahead, the Gripen project enters into a new phase. Export of the system will now also involve significantly broadened cooperation with foreign companies in the export countries. This cooperation offers opportunities for Swedish as well as the foreign engineering companies on the world market.

The company's support has created a long-term credibility through the financial stability we have provided. During the course of the project, Volvo Aero has been transformed from a defense-industry company, which in 1980 depended upon the military sector for 80% of its invoicing, to a diversified global company in the propulsion industry where 18% of our invoicing in 1998 was related to our military activities. Our operations in the commercial sector today comprise production of components for engines mounted on 80% of the world's commercial aircraft and we overhaul about 20 different commercial and military engine types in our service workshops. We also cooperate with companies in the European space program and are expanding in the field of marine and stationary gas turbines. Our invoicing in 1998 amounted to SEK 8,500 million and in the first six months of 1999 to SEK 5,000 million.

As a result of this industrial transformation combined with our base in Volvo, one of Sweden's largest industrial companies, we have provided a very strong industrial platform in the Gripen



Mats Hugosson

project. As a consequence of our involvement, the industrial cooperation that is often decisive in the export of combat aircraft becomes highly credible since we are active in all the markets in which Gripen is being marketed. The merger between Volvo and Scania will further enhance these benefits within the industrial cooperation area. Moreover, Scania is particularly strong in Brazil; one of the Gripen project's more important campaign countries in the near future. Volvo is also strengthening its global ambitions further, as demonstrated by the recently announced cooperation with Mitsubishi, which also has major aerospace operations.

Volvo Aero has been cooperating for many years in the propulsion field with most of the industry's major players in the commercial and the defense sectors. The cooperation with General Electric, the largest company in the industry, for the Gripen's

RM12 engine has been under way since the start of the project. Volvo Aero and GE have jointly developed the RM12 into a stable propulsion unit for the Gripen. The background to this effort is the combined know-how of Volvo Aero and GE being applied to develop the well-proven American engine, the F404, to a reliable engine to meet the special demands placed on the engine in the Gripen. The Volvo RM12 engine has good performance characteristics and, as with earlier Volvo engines, is now being developed further to be the optimum propulsion system during the Gripen's entire lifetime, which could cover more than 40 years. Currently, some important steps are being taken in the further development of the engine. This includes test flying of a new digital control system. Combined with the development of a new flame holder and new inlet section, this will result in lower maintenance cost while increased performance is attained.

Volvo Aero is a strong financial and technical partner in the Gripen project and plans to remain so. Through its industrial development and strength, Volvo Aero can also actively contribute to ensuring that, in addition to being the largest project in Swedish history, it is also one of the most successful!

Mats Hugosson
Assistant Business Area Manager
Military Engines
Volvo Aero Corporation

GRIPEN'S SECOND HOME

On Thursday 30 September 1999 the latest chapter in the Swedish Gripen story was opened when two aircraft arrived at F10 Wing, Ängelholm, in southern Sweden. On that day F10 conducted the 'roll-in' of its first Gripens as the wing prepared to launch pilot training for its new aircraft. The second squadron at F10 (2 Divisionen, Johan Blå) was the last Saab J 35 Draken squadron in the Swedish Air Force, but its J 35J-2s were withdrawn from use in December 1998. Since then, this unit has been preparing to become Sweden's third Gripen squadron.

When the Drakens were retired their pilots continued flying the Sk 60 jet trainer, the JA 37 fighter Viggen simulator and studying the Gripen ground school material. The Gripens that took part in the ceremony at Ängelholm were flown by the first two F10 pilots to undergo full conversion training at F7 Wing, Sätenäs – which they began in April this year. On returning to their own wing, the two taxied in and formally handed over the aircraft log books to Colonel Kjell Öfverberg, Commander of the F10 Wing.

The first batch of 16 F10 pilots travelled to Halmstad for initial technical training in the week following the 'roll-in'. After a week there, they moved to Sätenäs to begin the fully-fledged type conversion, a process that will take between five and six months. Upon their return, the other F10 squadron



Gripen pilots Christer Westerlund and André Brännström presents the first F10 Gripen to Colonel Kjell Öfverberg.

(1 Divisionen Johan Röd today an AJS 37 Viggen operator), will begin its transition on 1 April 2000.

However, pilot training is not the whole story as the new aircraft cannot operate without their 'new' ground crews. The ground crews at F10 have been in training since 1997 and, to date, the wing has 80 fully-qualified technicians, who have each received six months training.

From the first week of October Gripens were flying at F10. As F10 pilot training ramped up at Sätenäs, some of the 'displaced' F7 Gripens moved to Ängelholm to continue operational flying. This will also provide valuable hands-on experience for the F10 ground crews. Typically the F7 aircraft spend a week at F10, before returning home each weekend.

Before leaving Ängelholm the F10 pilots had their first experience with the Gripen training system, using the new equipment installed at their wing. While F7 remains the home of centralized Gripen training for the Swedish Air Force, the other wings will all have some elements of the training system to maintain acurrency and proficiency. At Ängelholm one Gripen Multi-Mission Simulator has been installed for tactical and system training.

The future of the F10 wing at Ängelholm is uncertain because of the proposed new peace time organization. This is to be decided by the Swedish Parliament during the spring of 2000. If the wing will be closed 2003 the Gripen aircraft and staff will move to remaining wings. ■

CZECH ANSWERS

The Government of the Czech Republic is currently evaluating the Saab-British Aerospace Gripen response to its recent request for information (RFI) ahead of a potential formal request for proposal (RFP) early in the new year. Unlike its neighbour Poland, the Czech Republic did not indicate a requirement for a transitional solution and this was consequently not addressed in the Gripen team's response.

The Gripen proposal for the Czech Armed Forces was based on the supply of 36 NATO-interoperable aircraft, comprising 30 single seat and six combat capable two-seater variant. A major benefit for Gripen in the Czech Republic is its ability to carry weapons integrated onto the Aero Vodochody L 159 light combat aircraft. This includes Maverick, AMRAAM and Sidewinder among others.

While the Czech Government has a requirement for up to 36 new supersonic multi-role fighters, the L 159 will

form the backbone of the Czech Armed Forces. For budgetary reasons, the Czech Government has made it clear that it expects a certain degree of weapons interoperability between the L 159 and its new multi-role supersonic fighters. The Czech Armed Forces has an urgent need to complete its evaluation and selection of new fighter aircraft and hope to take delivery of its first new supersonic aircraft during 2003, when their MiG 21's approach the end of their service life. ■

In June 1999 the first Gripen Wing in the Swedish Air Force, F7 Wing, visited Poland for a series of exercises and demonstrations. The wing deployed five Gripens and, with them, came a whole new approach to demonstrating Gripen's information superiority concept – in real time. Using a special hook-up to the aircraft's high-performance onboard datalink, the full tactical information flow between Gripens in the air and others on the ground was shown in real-time, on big screens, to a group of 200 observers.

This significant visit to Poland with four single-seat Gripens and one two-seater was split into two parts. The first was a tactical airpower display at Swidwin air base, in northern Poland. The second element included the DOL road-basing exercise, held at at Kliniska, some 89 km from Swidwin. For the first time, the Swedish Air Force (SAF) – which is no stranger to the skilled world of dispersed road-base operations – took part in this large annual Polish Air Force exercise. It also marked the first time that the SAF's conscript ground crews had supported a Gripen demonstration outside Sweden.

The first technology and tactics demonstration was performed in front of 200 Polish VIPs, lead by the former commander of the Polish Air Force General Kazimierz Dziok and members of the Polish defence committee. This important group was housed inside one of the Warsaw-Pact era hardened aircraft shelters, at Swidwin. The Swedish delegation was headed by Lt General Kent Harrskog, Commander of Sweden's Southern Military Command.

Events began when a formation of Gripens, armed with anti-ship, air-to-surface and air-to-air missiles, launched against targets in the Baltic sea. During their transit to the exercise area, the F7 Station Commander, Colonel Jan Andersson, gave a presentation on the Swedish Air Force's first 10,000 (flight)

hours of Gripen operational experience. Then, without ever having to leave the hardened shelter, the audience got to see exactly what the Gripens, now far out over the Baltic, could see with their sensors. Firstly, came a brief jump back in time as a film sequence showed what had happened an hour earlier, when the pilots set up their mission on the Gripen planning computers, inside the very same shelter. Then the screens switched to the image of a real Gripen tactical indicator screen – a live feed from an aircraft standing outside on the ramp. Thanks to a video camera and a 200-m cable, the Swedish technicians were able to beam the whole tactical situation over the Baltic from the Gripen's cockpit displays onto the big screen.

By using the Gripen's secure broadband datalink, the tactical indicator screen in the static aircraft showed exactly the same radar, navigation, status and target information as the screens in the two lead mission aircraft. The Gripens attacked and sank their 'target', in this case a Swedish Navy corvette, using Mavericks and the Saab long-range anti-ship missile, the Rbs 15. While the spectators back at the base were shown the Swedish mobile command unit, these same aircraft returned home. Outside the shelter the Swedish conscripts sprung into action as soon as their aircraft had touched the ground. Within 10 minutes the Gripens (with new pilots) were back in the air, completely refuelled and rearmed, and now carrying stand-off DWS 39 dispenser weapons and AMRAAM missiles.

As after any training mission, the pilots from the previous sortie sat down

Grzegorz Holdanowicz, ALTAIR

Grzegorz Holdanowicz, ALTAIR

with the computerized evaluation and debriefing system, to watch all the recorded mission data. On the big screen the audience could again watch

the attack on the corvette right to the end, thanks to the mission recorder in the aircraft. The Maverick has an imaging seeker and so the 'missile view' of the whole attack could be stored on the recorder for playback later.



Bengt Saleryd, F7

GRIPEN GOES LIVE IN POLAND



The Gripens next executed an air attack exercise in a sector 50 km north of Swidwin. The enthralled audience continued to watch the entire mission through the datalinked tactical display. They saw how the aircraft changed from air-to-air to attack mode with the push of a button. After fighting their way through the air defences the two Gripens swept round to roll in on their final target – the aircraft shelter and the audience inside. When the two jets roared over the base the guests could at last hear them as well as see them on

screen – but by then it was too late, the shelter had long-since been destroyed!

To round off the day's serious purpose, the F7 display pilot, Captain Martin Birkfeldt, performed his Gripen air show for the crowd and one lucky Polish pilot got the chance to fly the Gripen two-seater – becoming the first Polish pilot to fly a Gripen in Polish air-space.

The audience had a change for the second day, when operations moved to the Kliniska road base. Colonel Jan Andersson once again gave his briefing

on Gripen in front-line Swedish service and, seconds after he had finished speaking, four Gripens appeared low over the base. Three landed immediately on the road-strip, while the fourth climbed straight into an air display. In no time the four had refuelled, rearmed and were on their way back to Sweden.

*This report was written by
Major Anders Linnér for
the Swedish Air Force Magazine
Flygvapennytt.*

GRIPEN FORGES AHEAD AT PARIS '99

Four years ago Bengt Halse and John Weston unveiled the Saab-British Aerospace Gripen partnership at the Paris air show, with a handshake in the warm June sunshine. This year the Gripen team were back in Paris with several important project milestones behind them and Gripen in the flying display at Le Bourget for the first time. Fresh from success in South Africa, and with their place in Sweden's defence materiel plan confirmed, the Gripen team had a lot to celebrate.



Austin J. Brown

Speaking at a packed press conference Mr Hans Krüger, Senior Vice President and General Manager of Saab-British Aerospace Gripen, announced that development programmes were now in place to secure Gripen for a 30-year operational career in the Swedish Air Force. The planned phasing-in of advanced technologies will also feed directly into the export programme, extending Gripen's operational capabilities for its new customers. Among the items included for immediate progress, Krüger listed the electronic warfare system, reconnaissance system and the further integration of precision-guided weapon – and he anticipated that they would all be fully fielded by 2002. "The quality of the threat will improve", said Krüger "Gripen will be ready to meet that threat."

The success of Saab-British Aerospace in winning preferred status in South Africa's fighter competition has turned attention firmly back on Gripen exports. The Gripen team's analysis of the future fighter market over the next 10 to 20 years foresees a requirement for 2,000 new combat aircraft and Gripen intends to capture 20 per cent of those sales – or some 400 aircraft. Hans Krüger also commented that the 'real' response from potential customers supported those figures, adding "a number of markets have come back to us in a formal way. It's a good sign that people are getting serious again."

Away from the conference rooms, show-goers were treated to a daily flying display by a Gripen, with Saab test pilot Fredrik Muehler at the controls. Muehler is a former Draken

display pilot and former member of the Swedish Air Force aerobatic team, Team 60. He transitioned to Gripen in September 1997 and began working up a display routine before the end of the year. He flew his first public show at Chile's FIDAE exhibition in 1998 and, during that year, he went on to fly over 50 displays in nine countries. At Paris he flew a tight six-minute routine demonstrating the aircraft's crisp handling qualities. The aircraft involved was a regular Swedish Air Force Gripen taken straight from F7 and not 'hot-rod-ded' for display flying in any way. It is a measure of Saab's confidence in Gripen that only a single aircraft was brought to the show for the flying display – no backup accompanied it, nor was one ever required.

POLISH RESPONSE

British Aerospace and Saab have submitted a response to the Polish Government's RFI for 60 new multi-role fighter aircraft initially, with the prospects for 90 further fighters thereafter. Recognising the Polish Government's wish to acquire modern fighters as soon as possible, while meeting short term budget limitations, the RFI was unusual in that it specifically asked for proposals for 'appropriately prepared and modernised aircraft' for an interim solution.

The Gripen team responded with a totally integrated solution covering the period from contract effectively to 2012, and for the continued support for more than 30 years. Its response pro-

posed the supply of 60 fourth-generation Gripen supersonic fighters to meet the 21st century defence needs of the Polish Air Force. These NATO-interoperable multi-role fighters would form the core of Poland's modernised air force to fulfill national defence, NATO requirements and international peace support operations worldwide.

British Aerospace and Saab also proposed a transitional solution based on the loan of 18 Swedish Air Force Gripen fighters for a five year period – a stepping stone to the proposed acquisition of 60 new build Gripens by the Polish Government in the period up to 2012. (These Swedish Air Force loan aircraft were offered by the team on the condition that Poland gave a firm commitment to purchase new Gripens and were not offered as a long term solu-

tion.) The aircraft, which would undergo modification to ensure NATO compatibility, would be returned to operational service with the Swedish Air Force after the loan period.

Supported by the Swedish Government, the Saab-British Aerospace proposal included the opportunity for a number of Polish Air Force pilots to train with the Swedish Air Force on Gripen, enabling the early formation of a group of fully qualified multi-role operational instructors and pilots. Linked to the procurement of Gripen, the Saab-British Aerospace team also presented a unique opportunity to revitalise the Polish defence industry, particularly the aerospace sector, through the continued development of strategic partnerships with key European companies.

M I S C E L L A N Y

Fly like a Prince

It's official – Sweden now has its own "Prince of the Gripen". His Royal Highness Prince Carl Philip became the first member of the Royal Family to fly in a Gripen fighter. As a graduation present upon finishing High School, the Prince was presented with an honorary Gripen flight from the Swedish Armed Forces. On June 17 he made an hour long flight in a two-seat Gripen, flown by Lt Colonel Björn Johansson.



Peter Lander

**Breitling presents Gripen to Arlanda passengers**

Gripen-light, a full-scale model of a Gripen has been exhibited in the international departures hall at Stockholm Arlanda airport, in a cooperation between Breitling and Saab. The imposing model is accurate in every detail and very few of those who gaze at it will ever be this close to a Gripen again. Unfortunately for the Arlanda passengers Gripen Light is a much sought after treasure. After a month it had temporary to move on, to the technical exhibition at Älvsjö, but will later return to Arlanda to show the Breitling-Saab connection.

Slovenian state visit

During a state visit to Sweden the President of the Republic of Slovenia His Excellency Mr Milan Kucan visited Saab in Linköping and had a chance to take a closer look at the Gripen. The President and his wife were accompanied by the King of Sweden. Here they are seen during the Gripen air display, from left, King Carl XVI Gustaf, Governor Björn Ericsson, Mrs Stefka and His Excellency Mr Milan Kucan together with Mr Bengt Halse, CEO of Saab AB.



Torbjörn Caspersson

THE WORLD'S OLDEST TEST PILOTS MEET THE WORLD'S NEWEST FIGHTER

During the last two weeks of September a unique exchange took place between Britain's Empire Test Pilots School (ETPS) and the Gripen flight test team at Linköping. The ETPS, based at RAF Boscombe Down, is the world's oldest test pilot school and one of only four internationally recognised centres for military test pilot training. The job of the ETPS is to take experienced personnel and graduate them as qualified test pilots and test engineers. ETPS trains personnel not only for the UK but also takes in a small number of international students each year. This year, for the first time ever, a group of six test pilots and two senior instructors came to Saab to conduct a flight and systems evaluation of the Gripen. The team was led by Wing Commander Dave Best, the Officer Commanding ETPS, and included RAF pilots with backgrounds on the Harrier, Jaguar and the Hercules. Also among the team members were two US Navy Hornet pilots, a French officer and a pilot from Sweden's own Defence Material Agency (FMV).

The ETPS pilots were each given four to five hours in the Gripen full-mission simulator at Linköping. During this time they were able to familiarise themselves with the aircraft and learn to use its radar and other mission systems. Once satisfied with this, each pilot conducted a single sortie in a two-seat JAS 39B, for about 75 minutes. During each flight they performed standard test duties such as attitude captures, g captures and basic handling. Each pilot also evaluated the TILS autonomous landing system, that allows Gripen to perform landings in any weather conditions. Use of all the on-board systems, including the weapons, was another important element. In short the students had the opportunity to get to grips with a whole new aircraft type and operating system, and compare it with their experience on other modern combat aircraft.

ETPS has never conducted such a large-scale visit to any establishment equivalent to Saab's flight test centre before. Its students do undertake a 'pre-view' at the end of the standard course in which small groups of one or two fly and evaluate an aircraft they have never previously encountered, but the co-

operation with Saab was unprecedented. It is hoped that it will continue on a regular, annual, basis. As part of this particular exchange a team from Saab will go to Boscombe Down next year to fly with NVGs, FLIR systems and other technologies under test there – with emphasis on their use in a low-level fast jet environment.

Wing Commander Best remembered how the groundbreaking visit came to be arranged after a conversation at the 1998 Farnborough air show between himself and Arne Lindholm head of the Saab flight test department, "we were looking for something different and challenging to do and Gripen was an exciting prospect. I asked Arne 'can we come over', expecting the answer 'no' and instead the answer came back 'yes'. We are very, very grateful to Arne and Saab for being so forward-looking and positive. It was a very big deal to be allowed to come and fly such a state-of-the-art aircraft."

"At ETPS we run a one-year course from January to December but by September/October we are finished teaching and looking for exercises for the students. Gripen was ideal. It is a high-performance aircraft, the latest generation in fighters, with an extremely capable system. From a test pilot's point of view, quite apart from its sheer performance, we wanted to see how one pilot can cope with all the systems and still manage to fly the aircraft."

"I have to say that for someone with absolutely no groundschool in the aircraft, and just four hours in the simulator, to be able to jump straight in and use all the weapons systems in their basic modes, immediately, was amazing. It's a tremendous compliment to the designers who have got their MMI (Man-Machine Interface) so well developed. All of us have a lot of experience



Torbjörn Caspersson

with modern aircraft and advanced cockpits, but what is interesting is assessing how people put their designs together. Gripen is totally intuitive. I felt by far the most impressive aspect, for a pilot, was the systems integration. Even though it was labelled in Swedish it just didn't matter."

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Publisher: Jan Ahlgren
Editors: Lars Jansson, Saab
John Neilson,
British Aerospace

Saab AB, Gripen
SE-581 88 Linköping
Sweden
Telephone +46 13 18 00 00
Telefax +46 13 18 18 02
e-mail coms@saab.se
www.gripen.saab.se

British Aerospace
Corporate Communications
Lancaster House
Farnborough
GU14 6YU

Telephone +44 1772 63 33 33
Telefax +44 1772 85 52 79
www.bae.co.uk

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